

CLAIMS

I claim:

1. A method of assisting the movement of a trigger between a resting position and a firing position to increase the rate at which paintballs can be fired from a paintball gun, the method comprising the steps of:

5 positioning a primary magnet in the trigger of the paintball gun, the primary magnet being oriented such that the poles of the primary magnet extend along the line of movement of the trigger between the resting position and the firing position; and

10 positioning a secondary magnet behind the trigger of the paintball gun, the secondary magnet being oriented such that the poles of the secondary magnet extend along the line of movement of the trigger between the resting position and the firing position;

wherein the poles of the secondary magnet are oriented such that the secondary magnet repels the primary magnet when the trigger moves toward the secondary magnet.

2. The method of claim 1 wherein the primary magnet and the secondary magnet are formed from ferromagnetic material.

3. The method of claim 1 wherein the secondary magnet is positioned such that the secondary magnet repels the primary magnet only after the trigger has moved far enough to fire a paintball.

4. The method of claim 1 wherein the primary magnet and the secondary magnet are electromagnets.

5. The method of claim 4 further comprising the steps of:

polarizing the secondary magnet such that the secondary magnet attracts the primary magnet as the trigger is depressed and moved from the resting position toward the firing position;

5           sensing the movement of the trigger to the firing position; and reversing the polarity of the secondary magnet once the trigger reaches the firing position, such that the secondary magnet repels the primary magnet.

6.       The method of claim 5 further comprising the steps of:  
positioning a second secondary magnet in front of the trigger of the paintball gun, the second secondary magnet being oriented such that the poles of the second secondary magnet extend along the line of movement of the trigger;

5           polarizing the second secondary magnet such that the second secondary magnet repels the primary magnet as the trigger is depressed; and reversing the polarity of the second secondary magnet upon the trigger reaching the firing position such that the second secondary magnet attracts the primary magnet to return the trigger to the resting position.

7.       A method of assisting the movement of a trigger between a resting position and a firing position to increase the rate at which paintballs can be fired from a paintball gun, the method comprising the steps of:

5           positioning a force element behind the trigger of the paintball gun;  
sensing the movement of the trigger from the resting position to the firing position; and  
activating the force element to assist the movement of the trigger from the resting position to the firing position.

8.       The method of claim 7 further comprising:  
positioning a second force element in front of the trigger of the paintball gun;

sensing the movement of the trigger from the firing position to the  
5 resting position; and

activating the second force element to assist the return movement of  
the trigger from the firing position to the resting position.

9. The method of claim 7 wherein the first force element and the  
second force element are electromagnets.

10. The method of claim 8 wherein the first force element and the  
second force element are electrically actuated solenoids.

11. A mechanism for assisting the movement of a trigger between  
a resting position and a firing position to increase the rate at which paintballs can  
be fired from a paintball gun, the assistance mechanism comprising a force element  
positioned behind the trigger, the force element being operable to assist movement  
5 of the trigger between the resting position and the firing position.

12. The mechanism of claim 11 wherein the force element is a  
secondary magnet, the secondary magnet being oriented such that the poles of the  
secondary magnet extend along the line of movement of the trigger, the mechanism  
further comprising:

5 a primary magnet positioned in the trigger of the paintball gun, the  
primary magnet being oriented such that the poles of the primary magnet extend  
along the line of movement of the trigger; and

a second secondary magnet positioned in front of the trigger, the  
second secondary magnet being oriented such that the poles of the second  
10 secondary magnet extend along the line of movement of the trigger;

wherein the secondary magnet and the second secondary magnet are  
oriented relative to the primary magnet such that the secondary magnet and the

second secondary magnet assist in movement of the trigger between the resting position and the firing position.

13. The mechanism of claim 12 wherein the secondary magnet, the primary magnet and the second secondary magnet are all electromagnets.

14. The mechanism of claim 13 further comprising a sensing means positioned to detect the movement of the trigger between the resting position and the firing position, wherein the polarity of the secondary magnet and the second secondary magnet are reversed upon detection of movement of the trigger to the firing position.

5 15. The mechanism of claim 11 wherein the force element is an electrically operated solenoid.

16. A method of assisting the cocking and firing of a paintball gun to increase the rate at which paintballs can be fired, the method comprising the steps of:

sensing the movement of a trigger of the paintball gun from a resting 5 position to a firing position; and

supplying a source of air pressure to an actuating ram, the actuating ram having an actuating rod that activates a cocking and firing mechanism of the paintball gun such that the actuating ram cocks and fires the paintball gun.

17. The method of claim 16 further comprising the step of positioning an air valve behind the trigger such that movement of the trigger from the resting position to the firing position opens the air valve to supply air pressure to the actuating ram.

18. The method of claim 17 further comprising the step of releasing the pressure from the actuating ram after the actuating ram activates the cocking and firing mechanism, wherein the release of air pressure from the actuating ram returns the trigger to the resting position.

19. The method of 16 wherein the actuating ram is coupled to the actuating rod of a cocking ram of the paintball gun.

20. The method of claim 19 wherein the actuating ram and the cocking ram are opposed.